(No Model.) 2 Sheets—Sheet 1.

F. A. REHKOPF & C. F. ROSENBERG.

WAGON SCALE.

No. 262,617. Patented Aug. 15, 1882.

Fig. 1.

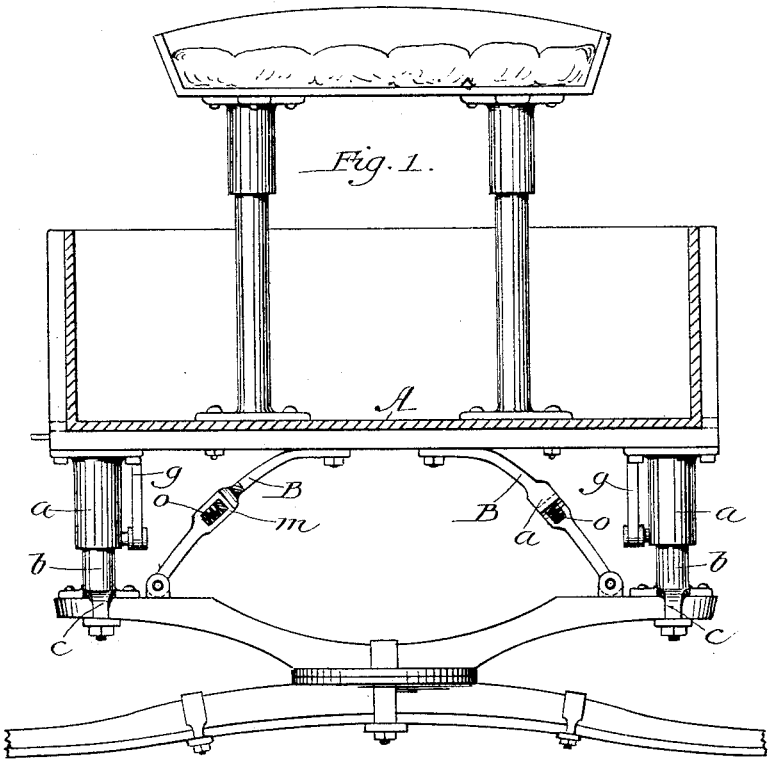


Fig. 2.

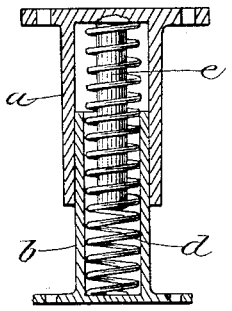
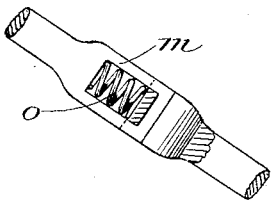


Fig. 3.



Witnesses:

Jacob Lorum

Frank S. Blanchard.

Inventors.

Frederick A. Rehkopf

Charles F. Rosenberg

By Prime Fisher

Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

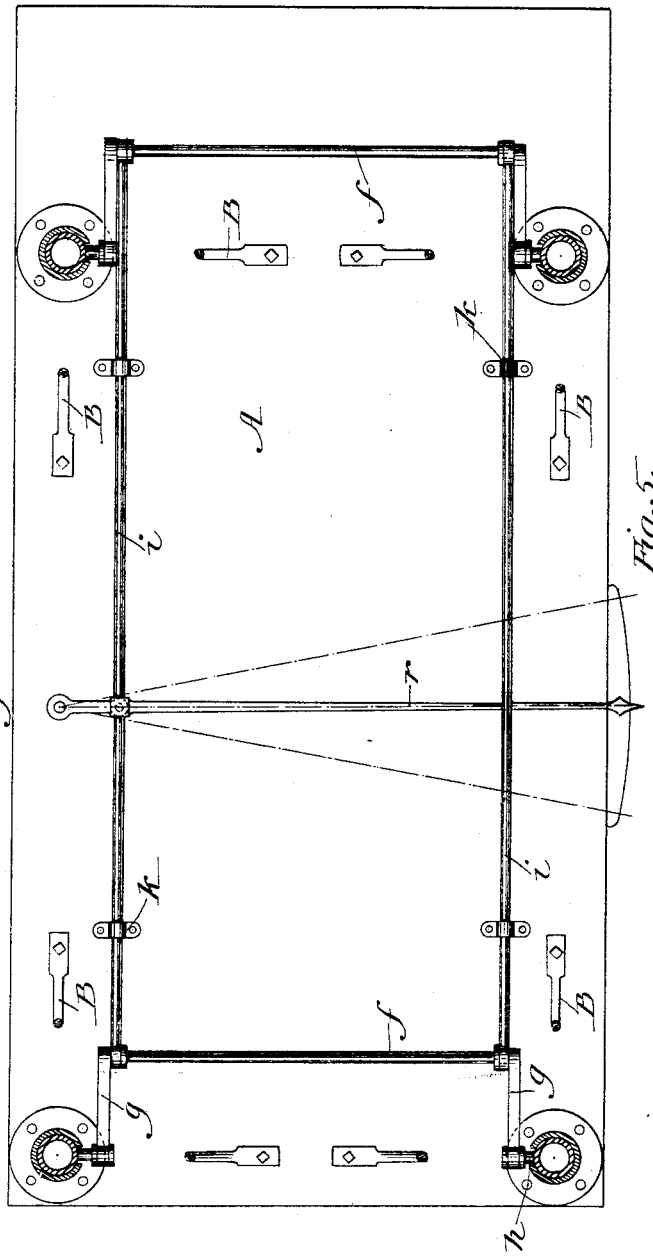
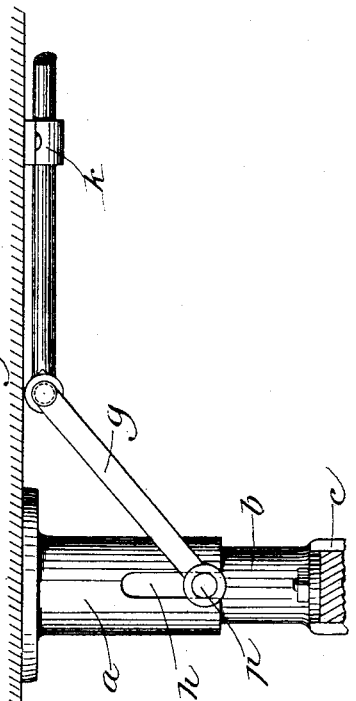


Fig. 5.



Witnesses:

Jacob Lorum.

Frank S. Blanchard

Inventors:

Frederick A. Rehkopff.

Charles F. Rosenberg

By Brice & Fisher

Attorneys

UNITED STATES PATENT OFFICE.

FREDRICK A. REHKOPF AND CHARLES F. ROSENBERG, OF CHICAGO, ILL.

WAGON-SCALE.

SPECIFICATION forming part of Letters Patent No. 262,617, dated August 15, 1882.

Application filed March 24, 1882. (No model.)

To all whom it may concern:

Be it known that we, FREDRICK A. REHKOPF and CHARLES F. ROSENBERG, citizens of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Scale-Wagons, of which the following is a full, clear, and exact description, to enable others skilled in the art to make and practice the same.

Referring to the accompanying drawings, Figure 1 is a front elevation of the scale-wagon; Fig. 2, a detail view of a standard-post and spring detached; Fig. 3, a detail view of a yielding brace detached; Fig. 4, a view of the under side of the scale-wagon body; and Fig. 5, a detached view, in side elevation, of parts of equalizing-frame and wagon-supports.

The object of the invention is to provide a wagon of such structure as will enable the weight of the load placed thereon to be readily determined, so that a platform-scale to determine such weight need not be used.

To that end the invention consists of certain improvements in construction, all as hereinafter set forth and more particularly defined in claims.

At each of the four corners of the ordinary wagon-body A is provided a short hollow cylindrical standard, *a*, securely fastened thereto and depending from the under side of said body.

Near the ends of the running-gear of the wagon—that is, near the ends of the wagon bolsters or axles—and directly beneath the standards *a*, upwardly project the short hollow posts *b*, which are inclosed in manner free to slide within the standards *a*, and are secured by clips *c* to the bolsters or axles that sustain them. Seated within these inner posts, *b*, are stout coil-springs *d*, which extend the full length of the hollow chamber formed by the standards *a* and posts *b*, and are kept in upright position by the guide-rods *e* depending from the base of the standards *a* or from the wagon-body, and which rods are encompassed by the upper end of said springs *d*. Both the standards *a* and posts *b* may be closed at their bases, so as to form cup-like chambers, within which the coil-springs *d* are seated; or, if preferred, these bases may be omitted, in which event the ends of the springs will rest directly against the wagon body and bolster or axle, respectively. In either event it must be manifest that the weight of the wagon-body and of any superposed load is borne up by the recoil of the springs *d* seated in the chambers, as aforesaid.

Beneath and across the wagon-body, near the front and rear ends, are the cross-rods *f*, said rods being bent at their ends to form crank-arms *g*, pivotally jointed to the pins *p*, which project rigidly from the inner posts, *b*, through slots *h* of the standards *a*.

In lieu of the pins *p*, the crank-arms *g* may be rebent, so as to pass directly through the slots *h* and be received in perforations of the posts *b*, in manner free to rotate therein. Side bars, *i*, which are sustained so as to slide easily within the eye-brackets *k*, are jointed at their ends to the cross-rods *f*, and so it is that if either of said cross-rods be rotated by any movement of the wagon-body a like rotation will be communicated to the other rod through the medium of the sliding side bars, *i*, attached thereto. The rods and bars thus make up a single system of parts, which may, for convenience, be termed an "equalizing-frame," the object of which frame will presently appear. A pointed arm, *r*, pivoted at its end to the wagon-body and secured to the side bar, *i*, partakes of a radial movement when the bar is caused to slide, and so at its opposite end serves to mark on a suitable scale the degree of movement of the bar *i*.

There being no reach to the running-gear, braces B extend from the wagon-body to the bolsters or axles, in manner shown by drawings, so as to stay the wagon-body firmly in position on the running-gear, and thus to save the short standards *a* and posts *b* from sudden or severe strains. The braces B, instead of being in one rigid piece, are divided and enlarged, as at *m*, to form boxes, within which the coiled springs *o* are seated. By this divided construction of the braces B the wagon-body is free to move up or down on the sustaining-springs *d*, while at the same time the braces B adapt themselves exactly to the changed position of the body, and, being kept taut or distended by the action of the springs *o* within the boxes *m*, act constantly as braces to maintain the body from undue strains.

When a load of any kind is put upon the

wagon-body the springs *d*, upon which said body rests, yield or are compressed in exact accordance with the weight of the load. As the wagon-body descends under the action of the load it carries the equalizing-frame with it, the crank-arms *g* of which, being pivoted to the upright posts *b*, as described, rotate about said pivots, and so in the end shift the slide-bars *i* and the pointed arm *r* in degree varying with that of the weight. The load will seldom be distributed in practice so as to bear equally on each of the sustaining-springs *d*, this difference in even distribution of the load giving rise to variations in compression of the springs *d*, so that one part of the wagon-body will sink lower than the other, and the slide-bars *i* and pointed arms *r* be at variance in degree of shift and in weight thereby marked, except for the fact, as heretofore described, that all the crank-rods and slide-bars are interconnected to form a single equalizing-frame, which, being carried by the wagon-body, rides down with it under action of the load. The crank-arm *g* of the frame in that quarter of the wagon most depressed by the load is borne upon by the excess weight, and by just so much said arm, through its leverage upon the frame, acts to shift and depress the remaining crank-arms, so that a substantially-even pull is thus established upon each corner of the wagon-body to which said crank-rods are attached. All parts of the wagon tend therefore to descend equally, and any wide variation in the scale-marks is avoided.

Provision may be made to take the weight of the load from off of the sustaining-springs *d* at all times save when the weight is to be actually determined, and it is manifest that the details in construction, as heretofore set forth, may be varied without departing from the essential features of the invention.

As shown by drawings, the wagon-seat may be provided with yielding springs inclosed within short standards and posts, after the manner heretofore described for the wagon-body.

It is clear that a scale-wagon thus constructed is of great advantage where access to a platform-scale for the purpose of determining the weight of a load is for any reason impossible or inconvenient.

Having thus described the invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a scale-wagon, the combination, with the wagon-body, of a series of recoil-springs and an equalizing-frame, substantially as described.

2. A scale-wagon provided with yielding braces, substantially as described.

3. A scale-wagon in which an equalizing-frame and yielding braces are combined, substantially as described.

4. In a scale-wagon, the combination, with the running-gear provided with projecting hollow posts, of a wagon-body having dependent standards to inclose said posts and a series of recoil-springs seated within said posts and standards, substantially as described.

5. In a scale-wagon, the combination, with the running-gear provided with projecting hollow posts, of a wagon-body having dependent standards to inclose said posts, a series of recoil-springs seated within said standards and posts, and an equalizing-frame secured to the wagon-body, which said frame consists of cross-rods having crank-arms attached to said projecting hollow posts, and of side bars jointed to the rods, all substantially as described.

FREDRICK A. REHKOPF.
CHARLES F. ROSENBERG.

Witnesses:
WILLIAM C. WHITING,
JAMES H. PEIRCE.